

REMARKS

This amendment is responsive to the Office Action mailed January 29, 2010. In the Office Action, the Examiner indicated that applicant's amendment filed November 13, 2009, was not fully responsive to the prior Office Action on the basis that the amendment did not point out the support in the specification for the "means plus" elements of Claims 51 and 52. Applicant responds herewith by submitting evidence of structural support in the specification for Claims 51 and 52. It is applicant's understanding that the prior amendment filed November 13, 2009, has been entered into the application file as a *bona fide* response. Applicant therefore requests reconsideration of the November 13, 2009, amendment in connection with the present claim amendments and the remarks below.

Claims 1-5, 9, 10, 28-32, 36-42, and 46-52 are pending in the application. As discussed below, Claims 38, 51, and 52 have been amended for further clarity and understanding. The claim amendments submitted herewith are made relative to the claims that were presented in applicant's November 13, 2009, amendment, with the prior amendments being entered.

Interview Summary

Prior to discussing the claim amendments, the undersigned counsel thanks Examiner Subramanian for his courtesy in reviewing Claims 51 and 52 and for his telephone call on April 28, 2010. In the telephone conference, Claims 51 and 52 were discussed with respect to meeting the requirements of 35 U.S.C. § 112. It is applicant's understanding that Claims 51 and 52, as presented herewith, meet the requirements of Section 112.

Amended Claims

Minor clarifying amendments to Claim 38 are submitted herewith to replace the words "if accessed and executed by a computer" with "--in response to being executed by a computer--". This amendment is not required for purposes of patentability nor does it narrow the scope of the claim, but is provided merely to improve the clarity of the claim.

The means claimed in Claim 51 were simplified for improved clarity. For example, the claimed "means for automatically controlling execution," as amended, causes Claim 51 to be interpreted as including "means for operating one of the first and second markets in a fast symbol mode," "means for operating the other of the first and second markets as a router that routes the order to the market operating in fast symbol mode without posting the order at the other of the first and second markets, wherein the order can be executed at only the market operating in fast symbol mode," and "means for coupling the first and second markets such that only the market operating in fast symbol mode maintains the order for execution by market participants at either of the first market or the second market." The amendments to Claim 51 are editorial only and do not narrow the scope of the claim.

Claim 52 has been amended solely to include further punctuation, without narrowing the scope of the claim.

Means Recited in Claims 51 and 52 Are Supported by Structure in the Application as Filed

The "means plus" elements recited in Claims 51 and 52 are supported by corresponding structure described in the specification as filed.

As explained in *WMS Gaming, Inc. v. International Game Technology*, 521 F.3d 1339, 51 U.S.P.Q.2d 1385 (Fed. Cir. 1999), the corresponding structure for a computer-implemented function in a means-plus-function claim includes the algorithms disclosed in the specification as well as the programmed general purpose computer. Applicant may express the algorithms in any understandable terms, including as a mathematical formula, in prose, in a flow chart, or in any other manner that provides sufficient structure. See *Finisar Corp. v. The DIRECTV Group Inc.*, 523 F.3d 1323, 1340, 86 U.S.P.Q.2d 1609, 1623 (Fed. Cir. 2008). M.P.E.P. § 2181 provides examples of cases where courts have held that the corresponding structure is adequate for computer-implemented means-plus-function claim limitations. See e.g., *In re Dossel*, 115 F.3d 942, 946-47, 42 U.S.P.Q.2d 1881, 1885 (Fed. Cir. 1997) and *Intel Corp. v. VIA Technologies, Inc.*, 319 F.3d 1357, 1366, 65 U.S.P.Q.2d 1934, 1941 (Fed. Cir. 2003).

As discussed below, the specification describes a programmed computer or network of computers and algorithms that cause the computer or network of computers to perform the functions of the claimed means. Prior to discussing examples of the structural support for the claimed means, it is helpful to first review portions of the specification for a background understanding of the terms used in the application.

Background

Referring to the drawings and in particular to FIGURE 1, the present application provides a block diagram showing computing components that are used to implement the algorithms described in the application. As explained in the present application:

System 5 is a *general purpose computer or network of computers programmed in accordance with the present invention* and functions as a platform for allowing electronic liquidity finder (ELF) programs and umpire programs to interact. (See page 4, lines 21-24; emphasis added.)

...

[T]he term 'platform' indicates a computer system for supporting software processes that can exist independently of each other and that communicate with each other in a standardized manner. That is, the platform makes it easier for processes to communicate with each other." (See page 5, lines 3-6.)

...

The platform of system 5 also includes order ELFs (oEs) 10, 11, 12; data ELFs (dEs) 20, 55; order umpires (oUs) 30, 31, 32, 33; evaluation umpire (eU) 40; and mirror ELFs (mEs) 50, 51, 52 and 53. oUs 31 and 32 are coupled via mE 51. (See page 5, lines 10-12.)

...

An ELF may be thought of as a virtual floor broker that operates at electronic speeds. Forming an ELF is the culmination of a procedure involving configuring an order-handling program with specifications from a trader, and *executing the configured program on the platform of system 5* to create an order handling engine, also referred to herein as a trading process. (See page 5, lines 15-18; emphasis added.)

...

An order umpire may be thought of as a formal or informal market that defines and implements the rules of engagement by which information or merchandise is exchanged between ELF's. An umpire is formed by configuring a market program with configurations from a market provider, and *executing the configured program on the platform of system 5* to create a market process. (See page 5, lines 20-24; emphasis added.)

...

Mirror ELF (mE) programs couple an order umpire with an external point, such as external site 80, or with another order umpire on system 5. (See page 11, lines 19 and 20.)

At page 22, lines 20-25, the application describes the representation of orders in multiple markets:

An order can be represented in multiple markets without risk of multiple executions. Multiple executions are prevented via several mechanisms. In one mechanism, control over an order is associated with a particular process, usually an order ELF but sometimes an order umpire in *fast symbol mode*, and another process trying to execute the order must first obtain permission from the controlling process before actually executing; this mechanism is referred to as a two-phase commit. (Emphasis added.)

Examples of Support for Means Claimed in Independent Claim 51

With respect to the means claimed in Claim 51, attention is drawn to the disclosure provided in at least FIGURES 49-58 and the corresponding description in the specification. As described at page 75, line 25, to page 76, line 2:

Figs. 49-58 are flowcharts that show how [order umpire] oU 30 responds to traffic from mirror ELF 50. A purpose of mirror ELF 50 is to synchronize two books, in whole or in part. The protocol ensures that an order, or cancel order message, that is submitted for posting is either posted in both books or in neither of the books. In this embodiment, the protocol is symmetrical because mirror link adapter 85 is configured to ensure symmetry. In other embodiments, the protocol need not be symmetrical. Mirror ELF 50 also allows for one or the other books to enter or end *fast symbol mode* in which all book entries for one or more symbols are maintained, unsynchronized, in only one book. (Emphasis added.)

The present application describes algorithms in which an order is simultaneously represented at multiple markets (e.g., order umpire 30 and external exchange 80) using a mirror

"ELF" (electronic liquidity finder) program 50. See, e.g., page 11, lines 19-29, and more particularly page 22, line 19, to page 23, line 22, as well as page 25, line 13, to page 26, line 7, of the present application as filed. As discussed in the application, both a first market and a second market are operable to execute trades between a plurality of market participants. A market participant is able to post an order at a market, which order is then made available to other market participants for execution. As explained at page 11, line 30, to page 12, line 6:

Fast symbol mode is sometimes referred to herein as fast mode. Fast symbol mode is entered when a market such as oU 30 or external 80 will no longer support a two-phase commit process prior to pairing of orders and will assume all posted orders are available for immediate execution. The only actions supported in fast symbol mode are post, cancel, and execute. If external 80, for example, entered fast symbol mode, oU 30 acts as an input station, forwarding any order it receives from any ELF directly to the mirror ELF for transmission to external 80. For any symbol, at most one of the markets coupled to mE 50 can be in fast symbol mode. During fast symbol mode, an umpire may provide reduced discovery or no discovery.

The order is thus represented in the market and can be acted upon in accordance with the rules of engagement specified by the market. As mentioned above, where a portion or all of an order is simultaneously posted at multiple markets, a mirror ELF 50 is configured to ensure that the order is executed at most at one of the markets.

Using the language of Claim 51, the application describes a computer system configured to operate a market. The system includes "means for automatically causing a portion or all of an order to be simultaneously available for execution in both a first market and a second market, wherein the same portion or all of the order is simultaneously available to market participants in each of the respective first and second markets to complete a trade." The disclosed computer structure (for example, system 5 as taught in FIGURE 1) enables an order to be simultaneously available for execution in multiple markets (here, in this example, first and second markets). Execution of the simultaneously available portion or all of the order is automatically controlled

such that the simultaneously available portion or all of the order is executed in at most one of the first and second markets.

According to Claim 51, the means for automatically controlling execution includes "means for operating one of the first and second markets in a fast symbol mode," "means for operating the other of the first and second markets as a router that routes the order to the market operating in fast symbol mode without posting the order at the other of the first and second markets, wherein the order can be executed at only the market operating in fast symbol mode," and "means for coupling the first and second markets such that only the market operating in fast symbol mode maintains the order for execution by market participants at either of the first market or the second market." For example, as indicated at page 25, lines 24-26, of the application as filed:

Additionally, a mechanism is provided to hook and unhook, or link and unlink, two markets, namely fast symbol mode which effectively makes one market the active market and the other market be a passive or slaved traffic router for the active market.

Fast symbol mode is discussed, for example, at page 39, lines 1-12. Turning further to the flow chart of FIGURE 51, at step 1126, a trading process (order umpire) oU 30 checks whether the other side is in fast symbol mode. If so, then oU 30 simply routes the cancel message via mE 50 and does not take any local action, so processing proceeds to step 1129. Similarly, see step 1131 of the flow chart in FIGURE 52 and steps 6005 and 6010 of the flow chart in FIGURE 95.

Attention is further drawn to the algorithms illustrated in FIGURES 93A-93C and discussed in the specification at page 102, line 11, to page 111, line 10, in the section titled "Use Case: Representation of Order in Multiple Markets While Preventing Duplicate Executions."

In view of the above, applicant respectfully submits that the specification as filed provides structural support for the claimed "means plus" elements of Claim 51. Corresponding structure in the specification for the claimed means is readily ascertained.

Dependent Claim 52

Claim 52 further recites:

wherein the means for automatically causing a portion or all of an order to be simultaneously available for execution includes:

means for posting a portion or all of an order in an order book maintained by one of the first and second markets; and

means for directing the same portion or all of the order to be posted in an order book maintained by the other of the first and second markets.

In this regard, applicant points out, for example, the specification beginning at page 25, line 13, which describes a service for synchronization of orders in multiple markets. See also the algorithms illustrated in FIGURE 50 which provides a flow chart for posting of orders using mirror ELF processing.

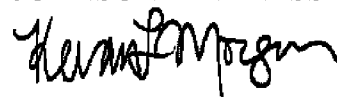
CONCLUSION

Applicant respectfully submits that the "means plus" elements claimed in Claims 51 and 52 are properly supported by the application as filed. For at least the reasons given above, and for the reasons set forth in applicant's November 13, 2009, response, allowance of pending Claims 1-5, 9, 10, 28-32, 36-42, and 46-52 is merited.

Applicant respectfully requests issuance of a notice of allowance at an early date. Should the Examiner have any remaining questions or issues needing resolution, the Examiner is invited to contact the undersigned counsel by telephone.

Respectfully submitted,

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